MULTIMEDIA UNIVERSITY

STUDENT ID NO

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Table No: _____

Course: _____

# MULTIMEDIA UNIVERSITY
# SUPPLEMENTARY EXAMINATION

**TRIMESTER 1, 2015/2016**

## TSE2451/TSR2701 – SOFTWARE REQUIREMENTS ENGINEERING

( All sections / Groups )

**17 NOV 2015**
**2.30 PM – 4.30 PM**
**(2 HOURS)**

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**INSTRUCTIONS TO STUDENTS**

1. This question paper consists of 9 pages with 6 Sections only.

2. Attempt **ALL** questions in **SECTION A, SECTION B, SECTION C and SECTION D, SECTION E and SECTION F**. The distribution of the marks for each question is given.

3. Please write all your answers in the answer box associated with each question in this question paper.

## Section A

Fill in each blank with ONE word that best fits the meaning of the sentence as a whole.

**(10 marks)**

| | | Answer |
|---|---|---|
| 1) | Requirements engineer is responsible for (a. ___ ) and specifying the system requirements. | |
| 2) | A requirements (b. ___ ) is an official statement of the system requirements for customers, end-users and software developers. | |
| 3) | (c. ___ ) are effective for requirements elicitation because stakeholders have something which they can experiment with to find their real requirements. | |
| 4) | System models may be validated by (d. ___ ) them. | |
| 5) | (e. ___ ) requirements are requirements which change because of changes to the environment in which of the system is operating. | |
| 6) | Traceability tables show the relationships between requirements or between requirements and (f. ___ ) components. | |
| 7) | Syntax defines the specific (g. ___ ) with which the specification is represented. | |
| 8) | Structured analysis techniques do not have (h. ___ ) defined viewpoints. | |
| 9) | (i. ___ ) requirements are requirements which specify the desired characteristics that a system or subsystem must possess. | |
| 10) | (j. ___ ) requirements ensure that if the hazard occurs, it does not result in an accident causing damage to people or the system's environment. | |

**Continued...**

## Section B

Identify the choice that best completes the statement or answers the question.

**(10 marks)**

**Answer**

1) Which of the following is a system class developed specially for customers? [ ]
   A. Ecological systems.
   B. Information systems.
   C. Mechanical systems.
   D. Social systems.

2) The following are common activities in requirements engineering process EXCEPT [ ]
   A. Requirements elicitation.
   B. Requirements documentation.
   C. Requirements validation.
   D. Requirements retention.

3) Which of the following is a critical activity for requirements elicitation process? [ ]
   A. Feasibility checking.
   B. Objective setting.
   C. Requirements review.
   D. Requirements testing.

4) The following are stages of requirements review process EXCEPT [ ]
   A. Distribute documents.
   B. Hold review meeting.
   C. Prototyping.
   D. Revise document.

**Continued…**

5) CORE has two types of viewpoints called as
   A. Direct and indirect viewpoints.
   B. Bounding and defining viewpoints.
   C. Data sinks and data sources.
   D. View and perspective.

6) Which of the following is a corrective action for requirements clarification?
   A. The author should improve the requirement by rewriting it.
   B. The stakeholders involved must negotiate to resolve the conflict.
   C. The requirements engineers should discover the missing information from system stakeholders or other requirements sources.
   D. The stakeholders must be consulted to decide whether the requirement should be deleted or modified to make it more realistic.

7) Which of the following is traceability information?
   A. Backward-backward traceability.
   B. Forward-forward traceability.
   C. To-from traceability.
   D. Forward-from traceability.

8) Which of the following is a method for requirement identification?
   A. Index.
   B. Dynamic renumbering.
   C. Requirements engineer's name.
   D. Stakeholder's identification card number.

9) The first step of De-Marco's top-down approach is
   A. Implementation of new physical system.
   B. Derivation of proposed logical model.
   C. Analysis of current physical system.
   D. Derivation of logical model.

10) Which of the following is a non-functional constraint for critical systems?
   A. Delivery.
   B. Portability.
   C. Safety.
   D. Maintainability.

**Continued...**

## Section C

1. A user manual is one of the requirement validation techniques. List out FOUR information that should be included in a user manual.

**Answer** **(4 marks)**

2. You are given six requirements (from R1 to R6). Draw a simple traceability table for the following requirements dependencies:
   - R1 is dependent on R3 and R4, and
   - R2 is dependent on R5 and R6.

**Answer** **(2 marks)**

**Continued...**

3. Draw an entity relationship diagram for the following:
*XYZ company needs to store information about employees (identified by staffid and name as attributes), and departments (identified by dname and budget as attributes). Employees work in departments; each department is managed by an employee.*

**Answer** **(4 marks)**

## Section D

1. Suggest FOUR consequences which arise when the system requirements are wrong.

**Answer** **(4 marks)**

**Continued...**

2. Describe THREE process improvement objectives that are widely used in a business.

| **Answer** | **(3 marks)** |
|---|---|
| | |

3. Describe THREE fundamental ways of structuring knowledge in requirements elicitation.

| **Answer** | **(3 marks)** |
|---|---|
| | |

**Continued...**

## Section E

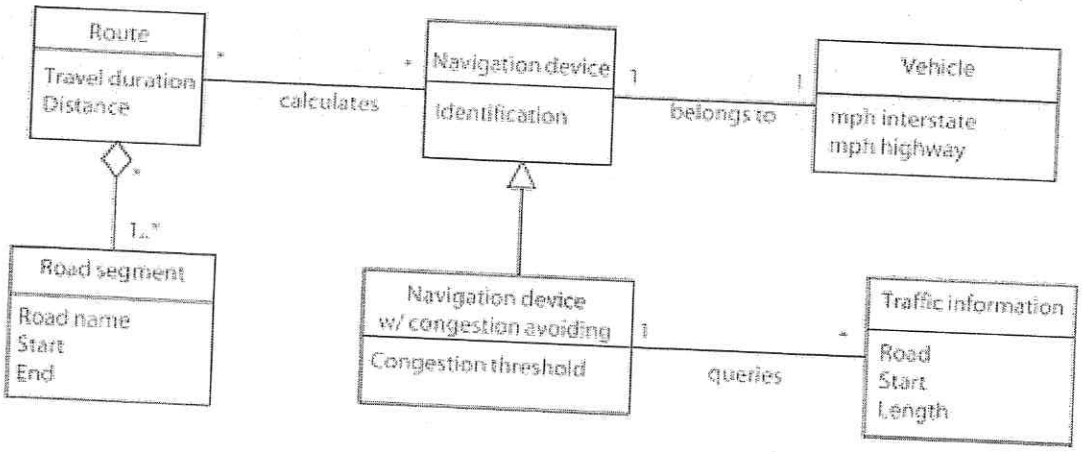


Figure 1.

1. Identify the type of diagram used in Figure 1.

| **Answer** | **(1 mark)** |
|---|---|
| | |

2. List all attributes of 'road segment' in Figure 1.

| **Answer** | **(3 marks)** |
|---|---|
| | |

3. Indicate the total number of classes found in Figure 1.

| **Answer** | **(1 mark)** |
|---|---|
| | |

4. List any THREE classes found in Figure 1.

| **Answer** | **(3 marks)** |
|---|---|
| | |

**Continued...**

5. Name the super-type found in Figure 1.

**(1 mark)**

| **Answer** |
| --- |
| |

6. Name the sub-type found in Figure 1.

**(1 mark)**

| **Answer** |
| --- |
| |

**Section F**

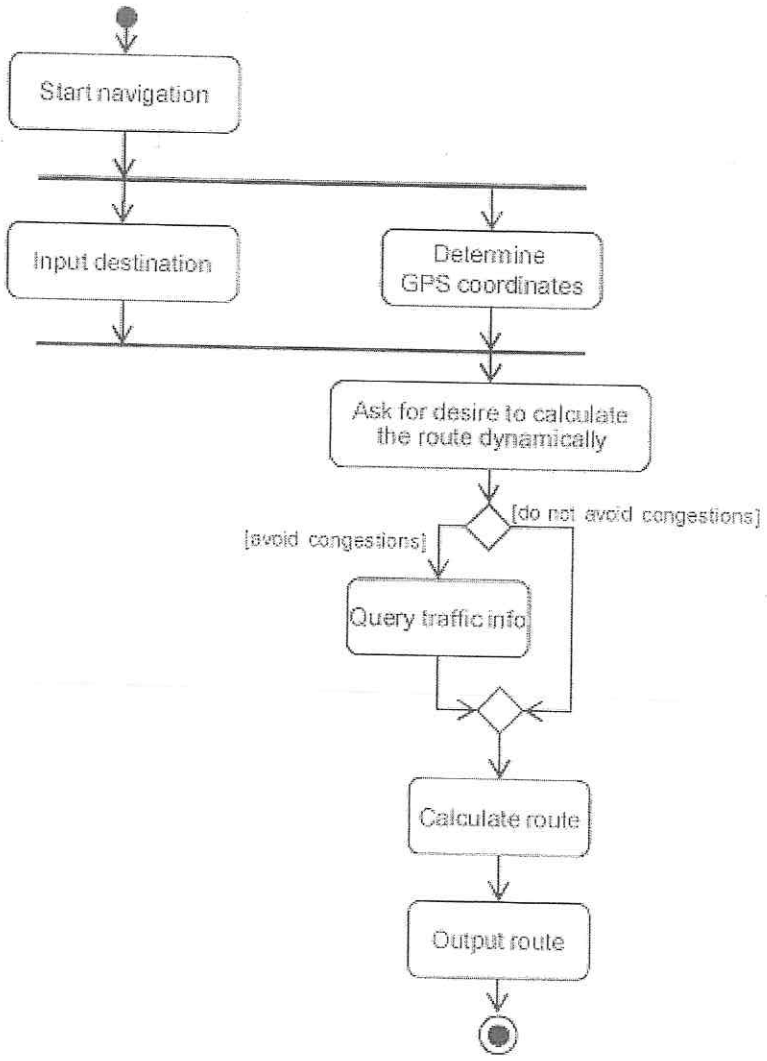


Figure 2.

**Continued...**

1. Identify the type of diagram used in Figure 2.

**(1 mark)**

| **Answer** |
| --- |
| |

2. Name TWO actions that are executed concurrently in Figure 2.

**(2 marks)**

| **Answer** |
| --- |
| |

3. What does the element ' ● ' stand for in Figure 2?

**(1 mark)**

| **Answer** |
| --- |
| |

4. What does the element ' ◊ ' mean in Figure 2?

**(1 mark)**

| **Answer** |
| --- |
| |

5. Draw the element of join.

**(4 marks)**

| **Answer** |
| --- |
| |

6. Draw the element of control flow termination.

**(1 mark)**

| **Answer** |
| --- |
| |

**End of Page**